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IS 7503-2 (1988): Glossary of terms used in rubber industry, Part 2: Definitions of Additives [PCD 13: Rubber and Rubber Products]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 7503 (Part 2) - 1988

Indian Standard

**GLOSSARY OF TERMS USED IN
RUBBER INDUSTRY**

“पुनर्विष्ट १९९५”
“RE-AFFIRMED 1995”

PART 2 DEFINITIONS OF ADDITIVES

(First Revision)

UDC 001'4 : 678'4

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*Indian Standard***GLOSSARY OF TERMS USED IN
RUBBER INDUSTRY****PART 2 DEFINITIONS OF ADDITIVES***(First Revision)***0. FOREWORD**

0.1 This Indian Standard (Part 2) (First Revision) was adopted by the Bureau of Indian Standards on 5 February 1988, after the draft finalized by the Rubber Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

0.2 This standard was originally formulated in six parts of IS : 7503 'Glossary of terms used in rubber industry', covering the following terms and definitions:

- (Part 1) - 1974 Definitions of general terms and terms pertaining to latex and physical chemical properties and testing, commonly used in rubber trade and industry
- (Part 2) - 1976 Terms relating to compounding process, machinery and vulcanization used in rubber industry
- (Part 3) - 1979 Terms relating to calendering, coating, and moulding commonly used in rubber trade and industry
- (Part 4) - 1979 Terms relating to extrusion commonly used in rubber trade and industry
- (Part 5) - 1981 Terms relating to process
- (Part 6) - 1986 Definitions relating to cellular materials

The various terms had been grouped together into the above six parts, as and when they came up. However, keeping in view the latest rationalized classification, existing in ISO 1382 : 1982, these terms have now been re-grouped into six parts (Parts 1 to 6) afresh under new rationalized and amplified classifications as follows:

- Part 1 Definitions of basic terms
(general terms and basic terms concerning latex)
- Part 2 Definitions of additives

(general terms, additives relating to vulcanization, protective agent, fillers and colours, extenders and plasticizers, special chemicals and latex additives)

- Part 3 Definitions relating to properties and testing
(general terms, uncured properties, properties and testing relating to cure, mechanical and physical properties, degradation properties and testing, properties and test specific for latex and chemical properties and tests)
- Part 4 Definitions relating to processing
(general terms, processing machine and processing of latex)
- Part 5 Definitions relating to products — Hoses
- Part 6 Definitions relating to cellular materials

0.3 In the present revised standards, some of the terms listed below which were present in the original parts of IS : 7503 have now been deleted and some new terms have been included:

- a) *Terms deleted* — Accelerated ultra, anti-cracking agent, banding time, book, calender crown, chalk blower, clamp, co-efficient of vulcanization, core, density, die holder, dielectric, dielectric constant, dielectric strength, dilatancy, doubling machine, draw, dumb-bell test piece, elongation, face cloth, former, frame, gum dipping, haul-off equipment, impulse, inhibitor, insert pin, iodine number, miscelle, modulus, mould finish, peak cure, pelletizer, premature coagulation, rate of cure, raw rubber, relative density, rubber hydrocarbon, separating agent, sheet rubber, shrink, skimmed fabric, stock, thixotropy, tip, treated liner, under cure, viscosity, vulcanizate and warming mill.

- b) *Terms added* — Adhesion strength, cure rate index, field latex, mix, Mooney viscosity, stress relaxation, and viscoelasticity.

0.4 In the preparation of this standard, assistance has been derived from the following publications:

- a) ISO 1382 - 1982 Rubber vocabulary.

International Organization for Standardization (ISO).

- b) BS 3558 : 1980 Glossary of rubber terms. British Standards Institution.

0.5 In case there is any difference between the definitions in this glossary and those in the standards for individual materials, the latter shall prevail.

1. SCOPE

1.1 This standard (Part 2) defines the terms relating to additives commonly used in rubber industry.

2. TERMINOLOGY

2.1 General

2.1.1 *Compounding Ingredients* — A substance added to a polymer or latex to form a mix.

2.2 Additive Related to Vulcanization

2.2.1 *Accelerator* — A compounding ingredient used in small amounts with a curing agent to increase the speed of vulcanization and/or to enhance the physical properties of the vulcanizate.

2.2.2 *Activator* — A compounding ingredient used in small proportions to increase the effectiveness of an accelerator.

2.2.3 *Retarder* — A compounding ingredient used in small amounts to reduce the tendency of a rubber mix to vulcanize prematurely.

2.2.4 *Vulcanizing Agent (Curing Agent)* — Material(s) added to rubber compound to bring about vulcanization.

2.3 Protective Agent

2.3.1 *Antioxidant* — A compounding ingredient used to retard deterioration caused by oxidation.

2.3.2 *Antiozonent* — A compounding ingredient which retards deterioration caused by ozone.

2.4 Fillers and Colours

2.4.1 *Carbon Black* — Material consisting essentially of elemental carbon in the form of near-spherical particles with major diameters less than 1 μm generally coalesced into aggregates.

NOTE — Carbon blacks vary in particle size and are used very widely in rubber compounds as reinforcing fillers.

2.4.2 *Clay* — Any naturally occurring mineral substance consisting predominantly of hydrated aluminium silicates. They are used as fillers in rubber compounds, some of them having mild reinforcing properties.

2.4.3 *Filler* — A solid compounding ingredient which may be added in relatively large proportions to a rubber to achieve specific properties.

2.4.4 *Inert Filler (Diluent)* — A filler having no reinforcing effect.

2.4.5 *Reinforcing Filler* — A filler used to increase physical properties of the rubber vulcanizate.

2.5 Extenders and Plasticizers

2.5.1 *Extender* — An organic material used as a replacement for a portion of the rubber required in a compound.

2.5.2 *Plasticizer* — A compounding ingredient used to reduce the viscosity of the rubber to facilitate processing or incorporation of fillers.

2.6 Special Chemicals

2.6.1 *Blowing Agent* — A compounding ingredient used to produce gas either by chemical or thermal action or both in manufacture of hollow or cellular articles.

2.6.2 *Bonding Agent* — A substance or mixture of substances used to bond rubber with other materials.

2.6.3 *Flame Retardant* — A substance used to reduce or delay markedly the ignition and/or combustion of rubber product.

2.6.4 *Mould Lubricant* — A material used to prevent a moulded product from adhering to the mould.

2.6.5 *Peptizing Agent* — A compounding ingredient used in small proportions to accelerate by chemical action the softening of rubber under the influence of mechanical action or heat or both.

2.7 Latex Additives

2.7.1 *Coagulant* — Substance used for causing coagulation [see 2.3.2 of IS : 7503 (Part 4) - 1988].

2.7.2 *Flocculent* — Substance used for causing flocculation [see 2.3.4 of IS : 7503 (Part 4) - 1988].

2.7.3 *Gelling Agent* — Substance which when added to a latex causes it to gel.

2.7.4 *Heat Sensitizer* — A gelling agent effective only at elevated temperature.

2.7.5 *Thickening Agent* — A compounding ingredient used to produce very marked thickening effects on latex over and above those due purely to a high solid content.